

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of producing a photocatalyst ~~having~~ comprising a carrier carrying titania and method ~~with~~ having a property of exhibiting thermal catalytic activity, said method comprising:

preparing a metal carrying step of causing said carrier carrying the titania to carry a compound of said metal;

~~a reduction step of hydrogen-reducing the metal carried on titania by hydrogen~~, in a heating atmosphere at a first treatment temperature, said compound of the metal carried by said carrier in said metal carrying step; and

~~an oxidation step of oxidizing~~, in a heating atmosphere at a second treatment temperature, said metal obtained by hydrogen reduction in said reduction step to thereby enhance activity of said metal.

2. (Original) The method according to claim 1, wherein said second treatment temperature is equal to or less than said first treatment temperature.

3. (Original) The method according to claim 1, wherein said second treatment temperature falls within a range of 300°C to 600°C.

4. (Original) The method according to claim 1, wherein said second treatment temperature falls within a range of 500°C to 600°C.

5. (Original) The method according to claim 1, further comprising a temperature adjusting step of setting a temperature of said carrier to said second treatment temperature in an inert gas atmosphere after said reduction step.

6. (Original) The method according to claim 1, wherein said metal is at least one of platinum, rhodium, ruthenium, and nickel.

7. (Currently Amended) The method according to claim 6, wherein the content of the platinum falls within a range of 0.04 weight % to 0.5 weight % relative to the weight of the photocatalyst.

8. (Original) The method according to claim 1, wherein the content of the titania is 10 weight % or more relative to weight of the photocatalyst.

9. (Original) The method according to claim 1, wherein said carrier is a silica bead.

10. (Currently Amended) The method according to claim 1, further comprising, prior to said metal carrying step, a step of impregnating into said carrier a first treatment liquid containing titanium ~~tetra~~isopropoxide tetraalkoxide and isopropyl alcohol;

a step of hydrolyzing a titanium compound impregnated into said carrier to cause said carrier to carry titania; and

a step of calcining said carrier carrying the titania.

11. (Cancelled)

12. (Withdrawn) A gas purifier for purifying gas containing a volatile organic compound, said gas purifier comprising:
a reactor filled with the photocatalyst according to claim 11;
light irradiating means for irradiating light on the photocatalyst in said reactor; and
supply and exhaust means for feeding said gas to said photocatalyst,
wherein a temperature of said photocatalyst upon purifying said gas falls within the range of 100°C to 200°C.

13. (Withdrawn) The gas purifier according to claim 12, wherein said volatile organic compound is at least one of acetaldehyde, formaldehyde, paraffin hydrocarbons, olefin hydrocarbons, and aromatic compounds.

14. (New) The method according to claim 1, wherein said oxidation step is carried out to obtain fine crystal particles of the metal by cutting bonds in a raft-shaped crystal structure of the metal formed in said reduction step.

15. (New) The method according to claim 1, wherein said oxidation step is carried out in the heating atmosphere containing oxygen.